

Amendments to the Claims:

Claims 1-41 **(canceled)**

42. **(New)** A fluidized-bed gasification and combustion furnace, characterized in that:
a fluidized-bed furnace is divided by a plurality of partition walls into a gasification furnace, a main combustion chamber of a combustion furnace and a heat recovery chamber of said combustion furnace, said gasification furnace and said heat recovery chamber being completely separated from each other;

a revolving flow of a fluidized medium in which an intense fluidizing region of the fluidized medium is formed so as to have a substantially high fluidizing velocity in the fluidized-bed in a certain region, thus generating an upward flow of the fluidized medium, and a weak fluidizing region of the fluidized medium is formed so as to have a substantially low fluidizing velocity in the fluidized-bed in another region, thus generating a descending flow of the fluidized medium, is formed in at least one of said gasification furnace and said main combustion chamber;

a circulating flow of the fluidized medium is formed between said gasification furnace and said main combustion chamber; and

a circulating flow of the fluidized medium is formed between said heat recovery chamber and said main combustion chamber.

43. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 42, wherein said partition wall for dividing said gasification furnace and said gasification furnace has an lower opening for allowing the fluidized medium to move from said combustion furnace to said gasification furnace.

44. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 42, wherein said partition wall for partitioning said main combustion chamber and said heat recovery chamber has an opening for allowing the fluidized medium to form a circulating flow therethrough.

45. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 42, wherein a combustible material supplying port is provided above a fluidized bed for supplying combustible material to said fluidized bed.

46. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 42, wherein a combustible material supplying port is provided for supplying combustible material to said gasification furnace.

47. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 42, wherein a fuel supplying port is provided for supplying auxiliary fuel to said combustion furnace.

48. **(New)** A fluidized-bed gasification and combustion furnace according to claim 42, wherein oxygen content of the fluidizing gas supplied to said furnace bottom of said gasification furnace is equal to or lower than a theoretical oxygen demand of the supplied combustible material.

49. **(New)** A fluidized-bed gasification and combustion furnace according to claim 42, wherein the fluidizing gas supplied to said furnace bottom of said gasification furnace comprises any one of air, steam, oxygen and combustion exhaust gas, or a mixture of at least two of them.

50. **(New)** A fluidized-bed gasification and combustion furnace according to claim 42, wherein an incombustible material discharging port is provided at a furnace bottom between said gasification furnace and said combustion furnace.

51. **(New)** A fluidized-bed gasification and combustion furnace according to claim 50, wherein said furnace bottom is inclined downwardly toward said incombustible material discharging port.

52. **(New)** A fluidized-bed gasification and combustion furnace according to claim 42, wherein in said combustion furnace, an incombustible material discharging port is provided at a furnace bottom between said main combustion chamber and said heat recovery chamber.

53. **(New)** A fluidized-bed gasification and combustion furnace according to claim 42, wherein an incombustible material discharging port is provided at a furnace bottom between said gasification furnace and said combustion furnace, and in said combustion furnace, an incombustible discharging port is provided at a furnace bottom between said main combustion chamber and said heat recovery chamber.

54. **(New)** A fluidized-bed gasification and combustion furnace according to claim 42, wherein in said combustion furnace, secondary air is supplied to a freeboard section of said combustion furnace.

55. **(New)** A fluidized-bed gasification and combustion furnace according to claim 42, wherein said gasification furnace and said combustion furnace are operated under a pressure equal to or higher than an atmospheric pressure.

56. **(New)** A fluidized-bed gasification and combustion furnace according to claim 42, wherein said gases discharged from said gasification furnace and said combustion furnace are dedusted and then introduced into a combustor.

57. **(New)** A fluidized-bed gasification and combustion system according to claim 42, wherein said fluidized-bed gasification and combustion furnace are housed in a pressure vessel in order to be operated at a pressure equal to or higher than an atmospheric pressure.

58. **(New)** A fluidized-bed gasification and combustion system according to claim 42, wherein said fluidized-bed furnace has a substantially rectangular shape in a horizontal cross-section.

59. **(New)** A fluidized-bed gasification and combustion system according to claim 42, wherein the produced gas discharged from said gasification furnace is blown into a slagging furnace.

60. **(New)** A fluidized-bed gasification and combustion system according to claim 59, wherein melting ashes discharged from said slagging furnace are introduced into a water chamber and quenched therein.

61. **(New)** A fluidized-bed gasification and combustion system according to claim 42, wherein

said gasification furnace serves to obtain a combustible gas by gasifying combustible material supplied thereto and has a gas discharging port for discharging said combustible gas;

said combustion furnace serves to completely combust unburned char, produced by said gasification in said gasification furnace, in an oxidizing atmosphere, and has a gas discharging

port for discharging a combustion exhaust gas produced by said combustion in said combustion furnace;

said partition wall has an opening for allowing the fluidized medium containing said unburned char to move to said combustion furnace; and

said combustible gas discharged from said gas discharging port of said gasification furnace and said combustion exhaust gas discharged from said combustion furnace are introduced into a slagging furnace, and ashes are melted in said slagging furnace.

62. **(New)** A fluidized-bed gasification and combustion system according to claim 61, wherein combustion gas having a high-temperature discharged from said slagging furnace is cooled by a waste heat boiler.

63. **(New)** A fluidized-bed gasification and combustion furnace, characterized in that: a fluidized-bed furnace is divided by a partition wall into a gasification furnace and a combustion furnace;

a revolving flow of a fluidized medium in which an intense fluidizing region of the fluidized medium is formed so as to have a substantially high fluidizing velocity in the fluidized-bed in a certain region, thus generating an upward flow of the fluidized medium, and a weak fluidizing region of the fluidized medium is formed so as to have a substantially low fluidizing velocity in the fluidized-bed in another region, thus generating a descending flow of the fluidized medium, is formed in said gasification furnace and said combustion furnace;

a circulating flow of the fluidized medium is formed between said gasification furnace and said combustion furnace; and

the revolving face of the revolving flow in said gasification furnace is perpendicular to the revolving face of the revolving flow in said combustion furnace.

64. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 63, wherein said partition wall for dividing said gasification furnace and said gasification furnace has an lower opening for allowing the fluidized medium to move from said combustion furnace to said gasification furnace.

65. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 63, wherein said combustion furnace is divided by a partition wall into a main combustion chamber for combusting char and a heat recovery chamber for recovering heat from the fluidized medium.

66. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 65, wherein said partition wall for partitioning said main combustion chamber and said heat recovery chamber has an opening for allowing the fluidized medium to form a circulating flow therethrough.

67. **(New)** A fluidized-bed gasification and combustion furnace according to claim 65, wherein in said combustion furnace, an incombustible material discharging port is provided at a furnace bottom between said main combustion chamber and said heat recovery chamber.

68. **(New)** A fluidized-bed gasification and combustion furnace according to claim 65, wherein an incombustible material discharging port is provided at a furnace bottom between said gasification furnace and said combustion furnace, and in said combustion furnace, an incombustible discharging port is provided at a furnace bottom between said main combustion chamber and said heat recovery chamber.

69. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 63, wherein a combustible material supplying port is provided above a fluidized bed for supplying combustible material to said fluidized bed.

70. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 63, wherein a combustible material supplying port is provided for supplying combustible material to said gasification furnace.

71. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 63, wherein a fuel supplying port is provided for supplying auxiliary fuel to said combustion furnace.

72. **(New)** A fluidized-bed gasification and combustion furnace according to claim 63, wherein said gasification furnace, said main combustion chamber, and said heat recovery chamber are arrayed in a straight line so that said gasification furnace and said heat recovery chamber are completely separated from each other.

73. **(New)** A fluidized-bed gasification and combustion furnace according to claim 63, wherein said gasification furnace and said heat recovery chamber are adjacent to each other by one of said plurality of partition walls, and said one of said plurality partition walls has no opening so that said gasification furnace and said heat recovery chamber are completely separated from each other.

74. **(New)** A fluidized-bed gasification and combustion furnace according to claim 63, wherein oxygen content of the fluidizing gas supplied to said furnace bottom of said gasification furnace is equal to or lower than a theoretical oxygen demand of the supplied combustible material.

75. **(New)** A fluidized-bed gasification and combustion furnace according to claim 63, wherein the fluidizing gas supplied to said furnace bottom of said gasification furnace comprises any one of air, steam, oxygen and combustion exhaust gas, or a mixture of at least two of them.

76. **(New)** A fluidized-bed gasification and combustion furnace according to claim 63, wherein an incombustible material discharging port is provided at a furnace bottom between said gasification furnace and said combustion furnace.

77. **(New)** A fluidized-bed gasification and combustion furnace according to claim 76, wherein said furnace bottom is inclined downwardly toward said incombustible material discharging port.

78. **(New)** A fluidized-bed gasification and combustion furnace according to claim 63, wherein in said combustion furnace, secondary air is supplied to a freeboard section of said combustion furnace.

79. **(New)** A fluidized-bed gasification and combustion furnace according to claim 63, wherein said gasification furnace and said combustion furnace are operated under a pressure equal to or higher than an atmospheric pressure.

80. **(New)** A fluidized-bed gasification and combustion furnace according to claim 63, wherein said gases discharged from said gasification furnace and said combustion furnace are dedusted and then introduced into a combustor.

81. **(New)** A fluidized-bed gasification and combustion system according to claim 63, wherein said fluidized-bed gasification and combustion furnace are housed in a pressure vessel in order to be operated at a pressure equal to or higher than an atmospheric pressure.

82. **(New)** A fluidized-bed gasification and combustion system according to claim 63, wherein said fluidized-bed furnace has a substantially rectangular shape in a horizontal cross-section.

83. (New) A fluidized-bed gasification and combustion system according to claim 63, wherein the produced gas discharged from said gasification furnace is blown into a slagging furnace.

84. (New) A fluidized-bed gasification and combustion system according to claim 83, wherein melting ashes discharged from said slagging furnace are introduced into a water chamber and quenched therein.

85. (New) A fluidized-bed gasification and combustion system according to claim 63, wherein

said gasification furnace serves to obtain a combustible gas by gasifying combustible material supplied thereto and has a gas discharging port for discharging said combustible gas;

said combustion furnace serves to completely combust unburned char, produced by said gasification in said gasification furnace, in an oxidizing atmosphere, and has a gas discharging port for discharging a combustion exhaust gas produced by said combustion in said combustion furnace;

said partition wall has an opening for allowing the fluidized medium containing said unburned char to move to said combustion furnace; and

said combustible gas discharged from said gas discharging port of said gasification furnace and said combustion exhaust gas discharged from said combustion furnace are introduced into a slagging furnace, and ashes are melted in said slagging furnace.

86. (New) A fluidized-bed gasification and combustion system according to claim 85, wherein combustion gas having a high-temperature discharged from said slagging furnace is cooled by a waste heat boiler.

87. A fluidized-bed gasification and combustion furnace, characterized in that:

a fluidized-bed furnace is divided by a partition wall into a gasification furnace and a combustion furnace;

said gasification furnace has a weak fluidizing region of a fluidized medium for forming a descending flow of the fluidized medium to allow combustible material containing incombustible material to descend by supplying a fluidizing gas so as to have a substantially low fluidizing velocity;

said combustion furnace has an intense fluidizing region of the fluidized medium by supplying a fluidizing gas so as to have a substantially high fluidizing velocity;

said partition, wall has an opening for allowing the fluidized medium containing char, which has descended by said descending flow, to move from said gasification furnace into said combustion furnace.

88. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 87, wherein said combustion furnace is divided by a partition wall into a main combustion chamber for combusting char and a heat recovery chamber for recovering heat from the fluidized medium.

89. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 88, wherein said partition wall for partitioning said main combustion chamber and said heat recovery chamber has an opening for allowing the fluidized medium to form a circulating flow therethrough.

90. **(New)** A fluidized-bed gasification and combustion furnace according to claim 88, wherein in said combustion furnace, an incombustible material discharging port is provided at a furnace bottom between said main combustion chamber and said heat recovery chamber.

91. **(New)** A fluidized-bed gasification and combustion furnace according to claim 88, wherein an incombustible material discharging port is provided at a furnace bottom between said

gasification furnace and said combustion furnace, and in said combustion furnace, an incombustible discharging port is provided at a furnace bottom between said main combustion chamber and said heat recovery chamber.

92. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 87, wherein a combustible material supplying port is provided above a fluidized bed for supplying combustible material to said fluidized bed.

93. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 87, wherein a combustible material supplying port is provided for supplying combustible material to said gasification furnace.

94. **(New)** A fluidized-bed gasification and combustion furnace, according to claim 87, wherein a fuel supplying port is provided for supplying auxiliary fuel to said combustion furnace.

95. **(New)** A fluidized-bed gasification and combustion furnace according to claim 87, wherein oxygen content of the fluidizing gas supplied to said furnace bottom of said gasification furnace is equal to or lower than a theoretical oxygen demand of the supplied combustible material.

96. **(New)** A fluidized-bed gasification and combustion furnace according to claim 87, wherein the fluidizing gas supplied to said furnace bottom of said gasification furnace comprises any one of air, steam, oxygen and combustion exhaust gas, or a mixture of at least two of them.

97. **(New)** A fluidized-bed gasification and combustion furnace according to claim 87, wherein an incombustible material discharging port is provided at a furnace bottom between said gasification furnace and said combustion furnace.

98. **(New)** A fluidized-bed gasification and combustion furnace according to claim 97, wherein said furnace bottom is inclined downwardly toward said incombustible material discharging port.

99. **(New)** A fluidized-bed gasification and combustion furnace according to claim 87, wherein in said combustion furnace, secondary air is supplied to a freeboard section of said combustion furnace.

100. **(New)** A fluidized-bed gasification and combustion furnace according to claim 87, wherein said gasification furnace and said combustion furnace are operated under a pressure equal to or higher than an atmospheric pressure.

101. **(New)** A fluidized-bed gasification and combustion furnace according to claim 87, wherein said gases discharged from said gasification furnace and said combustion furnace are dedusted and then introduced into a combustor.

102. **(New)** A fluidized-bed gasification and combustion system according to claim 87, wherein said fluidized-bed gasification and combustion furnace are housed in a pressure vessel in order to be operated at a pressure equal to or higher than an atmospheric pressure.

103. **(New)** A fluidized-bed gasification and combustion system according to claim 87, wherein said fluidized-bed furnace has a substantially rectangular shape in a horizontal cross-section.

104. **(New)** A fluidized-bed gasification and combustion system according to claim 87, wherein the produced gas discharged from said gasification furnace is blown into a slagging furnace.

105. **(New)** A fluidized-bed gasification and combustion system according to claim 104, wherein melting ashes discharged from said slagging furnace are introduced into a water chamber and quenched therein.

106. **(New)** A fluidized-bed gasification and combustion system according to claim 87, wherein

said gasification furnace serves to obtain a combustible gas by gasifying combustible material supplied thereto and has a gas discharging port for discharging said combustible gas;

said combustion furnace serves to completely combust unburned char, produced by said gasification in said gasification furnace, in an oxidizing atmosphere, and has a gas discharging port for discharging a combustion exhaust gas produced by said combustion in said combustion furnace;

said partition wall has an opening for allowing the fluidized medium containing said unburned char to move to said combustion furnace; and

said combustible gas discharged from said gas discharging port of said gasification furnace and said combustion exhaust gas discharged from said combustion furnace are introduced into a slagging furnace, and ashes are melted in said slagging furnace.

107. **(New)** A fluidized-bed gasification and combustion system according to claim 106, wherein combustion gas having a high-temperature discharged from said slagging furnace is cooled by a waste heat boiler.